

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management


12/10/2013

PRESERVATION BEST PRACTICES

SESSION 2
THE ROLE OF ENVIRONMENT IN
COLLECTIONS CARE:
TEMPERATURE & RH, LIGHTING
AND PEST MANAGEMENT

Today

- Environment and Environmental Monitoring
- Lighting
- Pest Management



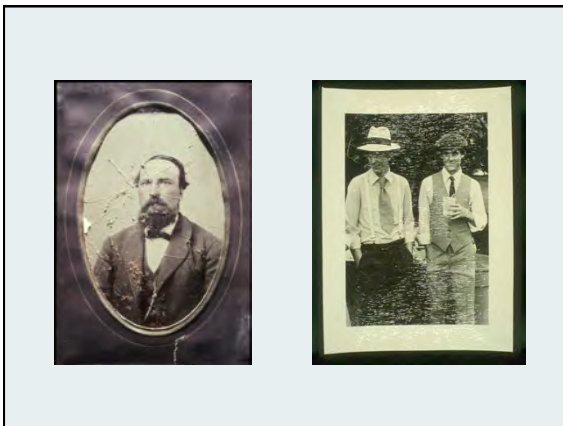
Environment and Environmental Monitoring

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013







This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management


12/10/2013

Poll




Environment and Environmental Monitoring: Getting Started

- Simple measures to improve environmental conditions are in place, such as closing doors, using fans etc.
- Collections are housed in a manner that protects materials from extremes in environmental fluctuations
- Collections are stored and exhibited in spaces that are capable of maintaining stable environmental conditions



Environment and Environmental Monitoring: Getting Started

- Monitoring equipment is available to spot check temperature and relative humidity levels
- Environmental data is regularly collected and retained




This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Ideal Environmental Standards

- Control temperature and relative humidity
 - NISO TR01-1995- Environmental Guidelines for the Storage of Paper Records
- Combined Stack and User Areas: 70°max 30-50% RH
- Closed Stacks: 65°max 30-50% RH
- Preservation Stacks: 30° -65° 30-50% RH



<http://www.dpcalc.org/>

<http://www.dpcalc.org/>

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

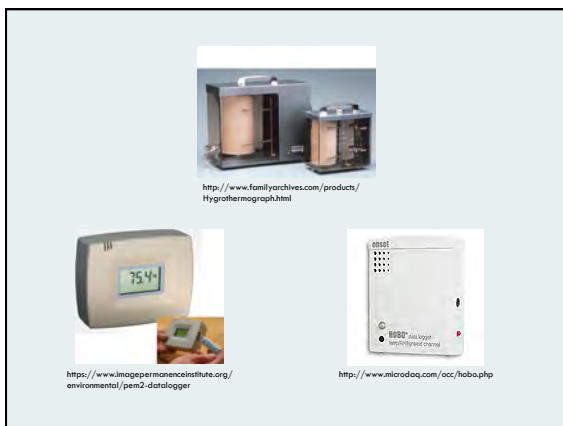
California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013



Environment and Environmental Monitoring: Good

A systematic program to measure humidity and temperature is in place with hygrothermographs or dataloggers. The system is based on defined monitoring objectives




This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013


Environment and Environmental Monitoring: Good

- Staff is trained in use of monitoring equipment
- Monitoring equipment is recalibrated as recommended by the manufacturer
- A record is kept of events that might affect environmental conditions, such as receptions, leaks, systems failures, outside weather conditions etc.
- Desired set points are established that are achievable for the storage and exhibition areas



Environment and Environmental Monitoring: Better

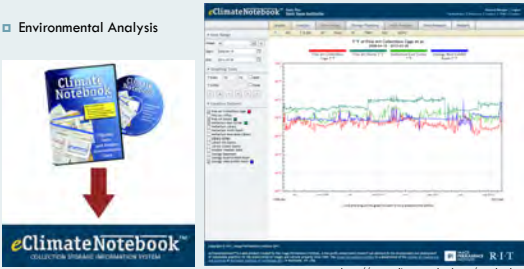
Qualified staff members or consultant analyzes and prepares a summary of environmental data



<http://www.samwisd.com/blog/wp-content/uploads/data-analysis-cartoon-1.gif>

Environment and Environmental Monitoring

Environmental Analysis



<https://www.eclimatenotebook.com/graphic.php>


This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management


12/10/2013

Environment and Environmental Monitoring: Better

- Environmental monitoring data is used to adjust environmental control systems and procedures
- The monitoring program is reviewed at regular intervals
- An environmental engineer is hired on an annual basis to ensure systems are working at their highest efficiency
- Specialized environments are established for sensitive collections materials
- Monitoring is done for levels of air pollutants



Lighting



Poll




This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

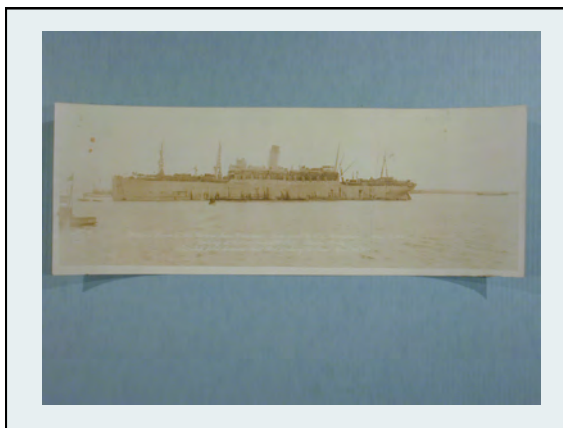
California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Light Damage

- Cumulative
- Irreversible
- Fading
- Color change
- Brittle








This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Recommended Light Levels


- Storage
 - 0-5 Footcandles; 0-55 Lux
- Display/Exhibitions
 - 5-15 Footcandles; 5-165 Lux
- Reading/Work
 - 30-60 Footcandles; 330-660 Lux
- Ultraviolet Content
 - < 50 microwatts per lumen; < 2-4% UV



"In the Library" By Yuri Levchenko, www.flickr.com

Lighting: Getting Started

- All windows in storage and exhibition areas are covered
- Light sources are not placed directly over collections materials
- Lights are turned on in storage areas only when materials are being retrieved
- Fluorescent lights are covered using ultraviolet filtering films





[https://www.preservationequipment.com/Store/Products/Equipment-\\$4-Tools/Lighting/UV-Fluorescent-Light-Filters](https://www.preservationequipment.com/Store/Products/Equipment-$4-Tools/Lighting/UV-Fluorescent-Light-Filters)


This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

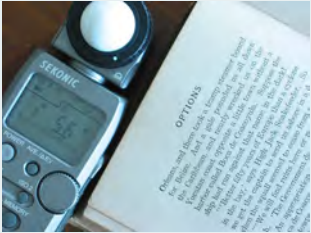
Lighting: Good

- Light sensitive materials on exhibit are regularly rotated
- Records are kept on light exposure for materials placed on exhibition
- A schedule is in place for testing and replacement of ultraviolet filtering film
- Light sensitive materials are not left out in work areas for extended periods of time



Lighting: Better

- Light meters are owned by the institution and light levels are checked regularly



"Metered Light" By Chad Miller, www.flickr.com

Light Meters



http://www.conservation-resources.co.uk/index.php?main_page=index&Path=44



<http://www.gaylord.com/adblook.asp?abid=157>

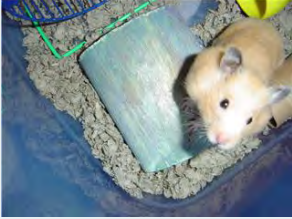
http://www.scottech.net/pages/littlemore_scientific_engineerin/

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Pest Management



Poll





Mouse Damage
Insectimages.org

Silverfish Damage
Library.nyu.edu

Cockroach Damage
archives.gov.on.ca

Powder Post Beetle Damage
Insectimages.org

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Pest Management: Getting Started

- Storage areas and furniture are cleaned on a regular basis
- All trash containing food is removed from the building on a daily basis
- Staff keeps food in airtight containers and cleans all eating areas daily



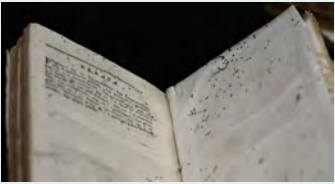
"Waste Watcher Recycling Bin" By Beach Systems, http://en.wikipedia.org/wiki/File:Waste_Watcher_Recycling_Station.jpg



<http://secrete.com/stuff/oxo-pop-containers/>

Pest Management: Getting Started

- All incoming items are examined for pest and mold infestations. Remedial action is taken to prevent the spread to the rest of the collection.
- Any items exhibiting signs of pests are isolated from the rest of the collection until treated



"Bookworm Damage on Errata Page" Su Rogness, http://en.wikipedia.org/wiki/File:Bookworm_damage_on_Errata_page.jpg

Pest Management: Good

- Vulnerabilities for an infestation are mitigated, such as sealing possible infiltration areas, use of outside lighting, correction of draining problems, sweeping gasket on exterior doors, and use of screens
- Storage and exhibition areas are monitored for the presence of pests with glue boards



<http://www.thefind.com/garden/info-catchmaster-glue-boards>



<http://www.stonybrook.edu/ehs/pest/>

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Pest Management: Good

- All pests are identified and records are kept about location, number found, as well as records of special events that might affect environmental conditions, such as receptions, leaks, systems failures etc.
- The institution's selected pest management company understands the specific pest control needs for safety of staff, visitors, and the collection. No insecticides are used consistently as a pest deterrent
- Advice is sought from a conservator before treating any affected materials



<http://ellencorlee.wordpress.com/2009/03/19/integrated-pest-management-made-easy/>

Pest Management: Better

- Instructions for cleaning storage and exhibition areas are written and followed
- An formalized integrated pest management program is in place for monitoring and responding to an infestation



<http://www.propacificpestcontrol.com/>

IPM

“Preservation professionals increasingly recommend a strategy called *integrated pest management* (IPM). **This approach relies primarily on non-chemical means (such as controlling climate, food sources, and building entry points) to prevent and manage pest infestation.** Chemical treatments are used only in a crisis situation threatening rapid losses or when pests fail to succumb to more conservative methods.”

- Beth Lindblom Patkus

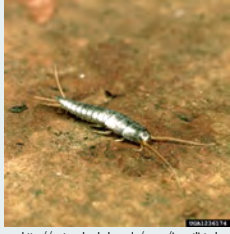
This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Principles of IPM

- Prevention
 - Take necessary measures to prevent the need to use chemical extermination
 - Facilities, Environment, Housekeeping
- Early Detection
 - Consistent monitoring and inspection
- Elimination
 - Take necessary actions to eliminate pests, preferably through non-chemical means



<http://nature.berkeley.edu/upmc/insectlist.php>

Pest Management: Better

- Selection of pest infestation treatments, traps, and bailing are appropriate for the safety of collections and people
- A specialist in integrated pest management programs for cultural institutions review the IPM program at regular intervals
- A separate space is available for segregation of infested materials or those suspected of infestation

Thank you and Questions

Questions about collections care?

Contact the California Preservation Program
info@calpreservation.org



This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.

California Preservation Program – Part 2 – The Role of Environment in Collections Care: Temperature and RH, Lighting, and Pest Management

12/10/2013

Next Session

Session 3: Handling, Access, Storage, and Exhibition
December 12, 2013



Archives of American Art

This material has been created for the Infopeople Project [infopeople.org], and has been supported in part by the U.S. Institute of Museum and Library Services under the provisions of the Library Services and Technology Act, administered in California by the State Librarian. This material is licensed under a Creative Commons 3.0 Share & Share-Alike license. Use of this material should credit the author and funding source.